

Q2
add may be bonded together to form a ring; L^1 and L^2 each independently represents a bridging group; and $n1$ and $n2$ each independently represents an integer of 0-30.

Please add the following new claim:

Q3 --Claim 21. (New) The photothermographic material according to claim 9, wherein the film surface pH variation after coating is within a range of fluctuation of ± 0.1 .--

REMARKS

Status of the Claims

Claims 1-21 are pending and stand ready for further action on the merits. Claim 21 has been added to further define the present invention.

Amendments to the Specification

Table 1 has been amended to delete reference to any data for sample nos. 1-2, 1-5, 1-7 and 1-10 since this data is incorrect. Applicants will forward a newly executed Declaration and Power of Attorney if the Examiner believes that it is necessary.

Issues Under 35 U.S.C. §112, Second Paragraph (Paragraphs 1-2 of Office Action)

Claims 1-20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the reasons set forth in paragraph 2 of the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Examiner has rejected the language in claim 1, which recites, "film surface pH of the image-forming layer side of the support is substantially unchanged". The Examiner asserts that this phrase is indefinite since the pH value is relative with respect to time and circumstances and therefore the "unchanged" aspect cannot be determined in the absence of providing a specific condition or value.

The present specification at page 34, lines 21-34 indicates that the above-mentioned phrase refers to the fluctuation in pH "after coating". Claim 1 is amended to recite the additional limitation "after coating".

In view of the amendments to claim 1 and in view of the remarks hereinabove, reconsideration and withdrawal of the rejection of claims 1-20 under 35 U.S.C. 112, second paragraph, are respectfully requested.

Issues Under 35 U.S.C. § 102 (Paragraph 3 of the Office Action)

The Examiner indicates that the new American Inventors Protection Act of 1999 (AIPA) does not apply to the present application. This is incorrect, since the application was filed on August 14, 2001, a date which is after November 29, 2000. Therefore, the post-AIPA 35 U.S.C. 102(e) laws should apply.

Accordingly, any subsequent Office Action must be non-final so that the claims are examined under AIPA.

Issues Under 35 U.S.C. §§ 102(e)/103(a) (Paragraphs 4-8 of Office Action)

The Examiner rejects claims 1 and 9-14 under 35 U.S.C. § 102(e) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over either Hirano et al., U.S. Patent 6,165,707 (hereinafter referred to as Hirano '707) or Inoue et al., U.S. Patent 6,100,022 (hereinafter referred to as Inoue '022). The Examiner rejects claims 1 and 4-15 under 35 U.S.C. § 102(a) as being anticipated by Japanese Patent No. 2000-112072 (hereinafter referred to as JP'072). Further, the Examiner rejects claims 1-16 and 18-20 under 35 U.S.C. § 103(a) as being obvious over JP '072. Lastly, the Examiner rejects claim 17 under 35 U.S.C. § 103(a) as being obvious over JP '072 in view of Ito et al. (U.S. Patent 6,150,084). These rejections are respectfully traversed. Reconsideration and withdrawal thereof are requested.

As a preliminary note, based upon filing dates and/or

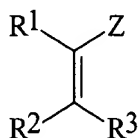
publication dates, Hirano '707 qualifies as prior art under 35 U.S.C. § 102(a) and § 102(e) and Inoue '022 qualifies as prior art under 35 U.S.C. § 102(a), § 102(b) and § 102(e).

The Present Invention

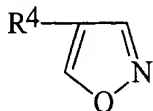
The present invention as recited in claim 1, as amended, relates to a photothermographic material having, on a support, at least an image-forming layer containing a non-photosensitive silver salt, a photosensitive silver halide and a binder and a protective layer outer than the image-forming layer on the support, and the photothermographic material satisfies at least one of the following Conditions I and II:

Condition I

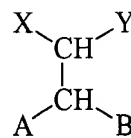
at least one of the layers formed on the image-forming layer side of the support contains at least one compound selected from compounds represented by the following formula (1), (2) or (3), and the NH_4^+ content in all the layers formed on the image-forming layer side of the support is 0.06 mmol/m^2 or less:



(1)



(2)

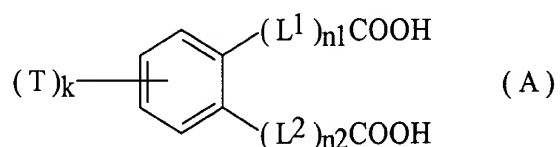


(3)

wherein the substituents are as defined in claim 1; and

Condition II

at least one of the layers formed on the image-forming layer side of the support contains a nucleating agent, and at least one of the layers formed on the image-forming layer side of the support contains at least one compound represented by the following formula (A), and film surface pH of the image-forming layer side of the support is substantially unchanged after coating:



wherein the conditions are as defined in claim 1.

Distinctions Between the Present Invention and the Prior Art

Although the Examiner has cited JP '072 under 35 U.S.C. § 102(a), the Examiner should note that JP '072 published on April 21, 2000, which is more than one year prior to the August 14, 2001 filing of the present application. Accordingly, JP '072 qualifies as prior art under 35 U.S.C. § 102(b). Moreover, JP '072 does not disclose compounds within the scope of condition (I). Thus, claims 4-8 should not be included in any rejection over JP '072.

Distinctions with Respect to Condition (II)

A review of Hirano '707 and Inoue '022 reveals that each reference fails to suggest or disclose the surface pH of the materials. Significantly, Hirano, Inoue and JP'072 fail to suggest or disclose the film surface pH of the materials.

The Examiner's attention is further directed to the description at lines 4 to 16 on page 34 of the specification. That is, in order to obtain photothermographic materials wherein the film surface pH is substantially unchanged, ammonia cannot be substantially added to the layers formed on the image-forming layer side of the support. The Examiner should note that each of the Hirano, Inoue and JP'072 references are silent with respect to film surface pH fluctuation. Further, the JP'072 reference teaches that ammonia is desirable for a pH modifier (See column 0100 of the JP'072 reference).

The Examiner should further note that LACSTAR 33078 is used as a binder for the emulsion layers in the samples of Example 1-2 of the Hirano reference. In support of Applicant's position, the Examiner's attention is directed to the following disclosures in the cited prior art:

- (i) Column 83 of Hirano et al.;
- (ii) Example 1 disclosed in column 43 of the Inoue et al. reference; and
- (iii) Example 1 disclosed in JP'072. See column 267 of the JP'072 translation.

Further, the results in the attached executed Rule 132 Declaration of Mr. Nakano demonstrate that LACSTAR 33078 contains NH_4^+ ion and ammonia is used as pH modifier. The procedures for conducting the tests are set forth on page 2 of the Rule 132 Declaration. The results are discussed on pages 2-3 of the Declaration. These results clearly demonstrate that materials using LACSTAR 33078 cannot satisfy Condition (II) of the present invention.

Accordingly, Applicant respectfully submits that one of ordinary skill in the art would not be motivated to reduce fluctuation of film surface pH based on the teachings of the cited references. Further, one of ordinary skill in the art could not have predicted that little temperature and humidity dependency can be obtained by satisfying Condition (II) as in the claimed present invention.

Distinctions with Respect to Condition (I)

The Examiner should note that JP'072 fails to teach or suggest the amount of NH_4^+ in all layers of the materials. As discussed above, LACSTAR 3307B is used as a binder in the emulsion layers of Example 1 of the JP'072 reference. See column 267 of the translation of JP'072. Since the samples in Table 1 of the JP'072 reference contain LACSTAR 3307B as a binder, these samples must contain NH_4^+ ion in an amount of more than 0.06 mmol/m², even if NaOH is used as a pH modifier such as in samples

than 0.06 mmol/m², even if NaOH is used as a pH modifier such as in samples 12-14.

Moreover, JP'072 is not only silent with respect to the content of NH₄⁺, but this reference also suggests that ammonia is desirable as a pH modifier. See column 0100 in JP'072. Therefore, it is readily apparent that this teaching would prevent one of ordinary skill in the art from conceiving in any way any material satisfying condition (I).

In view of the remarks hereinabove, reconsideration and withdrawal of the various rejections under 35 U.S.C. 102/103 are respectfully requested.

If the Examiner has any questions concerning this application, he is requested to contact the undersigned at the offices of Birch, Stewart, Kolasch & Birch, LLP.

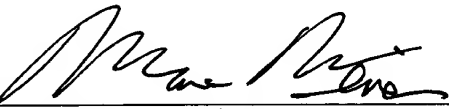
Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

Application No. 09/928,339

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Marc S. Weiner
Reg. No. 32,181

MSW/sh
2870-0171P

P. O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

MARKED-UP VERSION OF THE CLAIMSIN THE SPECIFICATION

Table 1 on page 106 has been amended as follows:

Table 1

Sample No.	Type of nucleating agent	Type of pH modifier	NH ₄ ⁺ content (mmol/m ³)	Dmin		Dmax	Difference of line width (μm)	Note
				25°C 80% RH 16 h	50°C 75% RH 3 days	25°C 10% RH 16 h		
1-1	Y	NH ₄ OH	1.00	0.12	0.17	3.1	18	Comparative
1-2	Y	NH₄OH	0.40	0.12	0.18	3.9	16	Comparative
1-3	Y	NH ₄ OH /NaOH	0.20	0.13	0.19	3.9	15	Comparative
1-4	Y	NaOH	0.01	0.17	0.20	4.1	16	Comparative
1-5	Y	NH₄OH	0.03	0.17	0.23	4.0	16	Comparative
1-6	No. 62	NH ₄ OH	1.00	0.12	0.12	3.1	19	Comparative
1-7	No. 62	NH₄OH	0.40	0.12	0.12	3.7	16	Comparative
1-8	No. 62	NH ₄ OH /NaOH	0.20	0.12	0.12	3.8	15	Comparative
1-9	No. 62	NaOH	0.01	0.12	0.12	4.1	8	Invention
1-10	No. 62	NH₄OH	0.02	0.12	0.12	4.1	8	Invention
1-11	No. 84	NaOH	0.01	0.12	0.12	4.3	7	Invention

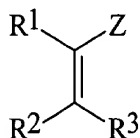
IN THE CLAIMS

Claim 1 has been amended as follows:

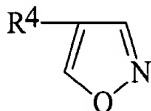
Claim 1. (Amended) A photothermographic material having, on a support, at least an image-forming layer containing a non-photosensitive silver salt, a photosensitive silver halide and a binder and a protective layer outer than the image-forming layer on the support, and the photothermographic material satisfies at least one of the following Conditions I and II:

Condition I

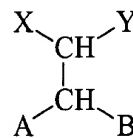
[At] at least one of the layers formed on the image-forming layer side of the support contains at least one compound selected from compounds represented by the following formula (1), (2) or (3), and the NH_4^+ content in all the layers formed on the image-forming layer side of the support is 0.06 mmol/m^2 or less:



(1)



(2)



(3)

wherein:

in the formula (1), R^1 , R^2 and R^3 each independently represents a hydrogen atom or a substituent, Z represents an electron-withdrawing group, and R^1 and Z, R^2 and R^3 , R^1 and R^2 , or

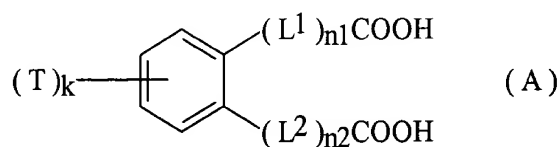
R^3 and Z may be combined with each other to form a ring structure,

in the formula (2), R^4 represents a substituent,

in the formula (3), X and Y each independently represents a hydrogen atom or a substituent, A and B each independently represents an alkoxy group, an alkylthio group, an alkylamino group, an aryloxy group, an arylthio group, an anilino group, a heterocyclyloxy group, a heterocyclylthio group or a heterocyclylamino group, and X and Y or A and B may be combined with each other to form a ring structure:

Condition II

[At] at least one of the layers formed on the image-forming layer side of the support contains a nucleating agent, and at least one of the layers formed on the image-forming layer side of the support contains at least one compound represented by the following formula (A), and film surface pH of the image-forming layer side of the support is substantially unchanged after coating:



wherein:

in the formula (A), T represents a monovalent substituent, k represents an integer of 0-4; when k is 2 or more, two or more of

T may be the same or different from each other or one another and may be bonded together to form a ring; L^1 and L^2 each independently represents a bridging group; and n1 and n2 each independently represents an integer of 0-30.

Claim 21 has been added.